

Malignant Melanoma:

- It is a malignant neoplasm of melanocytes and is recognized as the deadliest form of skin cancer.
- It is more common in individuals with lighter skin.

CLASSIFICATION:

- Melanoma associated with cumulative solar damage
 - Melanoma intermittently sun exposed skin
 - Melanoma neoplasms in chronically sun exposed skin

- Melanoma not consistently associated with CSD

- Acral melanomas
- Mucosal melanomas

ABCD of Melanoma:

- A - Asymmetry of shape
- B - Border of a pigmented lesion
- C - color
- D - Diameter
- E - Evolving or change over time, especially if Reg'd

MORPHOLOGY:

Grossly show striking variation in color

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Melanoma shows shade of black, brown, red, dark blue.
The border of melanoma are irregular & often notched.

GROWTH PATTERN

- Radial growth phase (RGP)
- Vertical growth phase (VGP)

RADIAL GROWTH PHASE:

→ melanoma spread horizontally so rapidly within the epidermis and superficial dermis.

- The most common type of melanoma, usually involves the most of skin exposed to sun.

VERTICAL GROWTH PHASE:

The melanoma develops a vertical growth phase.
characteristics:

→ Tumor cell invade downwards.

→ melanoma may appear as a nodule if develops a clon of cell with metastatic potential.

→ Risk of metastasis → depth of invasion, which is the distance from the superficial epidermal granular cell layer to the deepest subdermal tumor cell.

→ This measurement is known as Breslow thickness.

MICROSCOPY

- ⇒ Size → larger than normal melanocytes.
- ⇒ Nuclei → large with irregular shape, clumped chromatin.
prominent "cherry red" eosinophilic nucleoli.
- ⇒ Mitotic figures.
- ⇒ Architecture → solid mass, sheet, islands.
- ⇒ Melanin pigment → seen in melanoma.
melanoma which does not show pigment
⇒ Amelanotic melanoma.
- ⇒ Tumor infiltrating lymphocyte.
- ⇒ Special stain → H&E - Fontana.

or

DOPA-oxidase Rn.

- ⇒ HMB45 → Tumor Marker

PATHOGENESIS

- ⇒ mutation of BRAF and NRAS.
- ⇒ Familial melanoma ⇒ 10-15% chance
- ⇒ sporadic melanoma ⇒ highly pigmented individual
all at high risk.

Molecular Pathogenesis

Activation mutation in BRAF or RAS.

9 promote cell growth and survival

BRAC is an intermediate signalling component of the MAP kinase pathway.

→ Mutation that activates the expression of telomerase
TERT is the most mutated gene.

→ Loss of CDKN2A and its encoded tumor suppressor gene

→ PTEN, PS31A

Pathologic variable that predict the outcome of melanoma:

→ Tumor thickness. — Breslow.

— Ulceration of overlying skin

— Number of mitoses.

— level of invasion

— Microsatellites, clonal satellites

→ sentinel lymph node